

Amendments to the Specification:

Please delete previous abstract at page 35 and add the following new abstract:

Methods and apparatus, including computer program products, for a microinstruction pointer stack in a processor. A method executed in a processor includes executing microcode ( $\mu$ code) addressed by pointers stored in an out-of-order microinstruction pointer ( $\mu$ IP) stack, and manipulating the  $\mu$ IP stack with a set of microinstructions.